



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,859	02/01/2006	Valerias Schmidt	SCHMIDT24	2177
20151 7590 04/03/2008 HENRY M FEIEREISEN, LLC 350 FIFTH AVENUE SUITE 4714 NEW YORK, NY 10118				
EXAMINER DESAL, NAISHADH N				
ART UNIT 2834		PAPER NUMBER		
MAIL DATE 04/03/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/566,859

**Applicant(s)**

SCHMIDT, VALERIAS

**Examiner**

NAISHADH N. DESAI

**Art Unit**

2834

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 15-17, 20-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 15-17 and 20-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5,15 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasebe et al (US 5889342).

2. As per independent claim 1:

A rotor device comprising:

a laminated core arrangement having axial bores for conduction of a coolant (Col 3 ll 46-53, Fig 3 and abstract), and

two rotor pressure rings (Fig 3,21a and b), between which for axial securement of the laminated core arrangement therebetween (Fig 3,21a and b and 30), wherein at least one of the two rotor pressure rings is configured for routing the coolant through the axial bores (Col 3 ll 46-53, Fig 3), said rotor pressure ring having a coolant leadthrough in fluid communication with a first plurality of axial bores (Col 3 ll 46-53 and Fig 4,30), a bore assembly in fluid communication with a second plurality of axial bores (Fig 4,25).

and

a coolant routing wall which projects obliquely outward and is able to conceal the bore assembly in an axial direction (Col 3 ll 46-53 and Fig 3,21a, 24a and Fig 4,24, also it would be inherent for a person skilled in the art to use an oblique ring or seal capable of concealing one or more bores or holes of the bore assembly).

3. As per dependent claim 2:

The rotor device as claimed in claim 1, wherein the coolant leadthrough has axial bores fluidly connected in one-to-one correspondence with a group (Fig 4,30) of axial bores of the laminated core arrangement (Fig 4,25), with a coolant stream through the axial bores of the group being essentially identical (it is inherent for the coolant stream to be essentially identical else the motor would not be cooled uniformly or evenly).

4. As per dependent claim 3:

The rotor device as claimed in claim 2, wherein the group has two axial bores (Fig 4,25).

5. As per dependent claim 5:

The rotor device as claimed in claim 1, wherein the at least one of the rotor pressure rings has rounded edges at predetermined areas for improving a coolant flow (Hasebe et al clearly shows in Fig 4,30 that the pressure rings has rounded edges at predetermined areas for improving coolant flow).

6. As per dependent claim 15:

An electric machine having a rotor device as claimed in claim 1 (Abstract of Hasebe et al).

Art Unit: 2834

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 4,6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al.

8. As per dependent claim 4:

The rotor device as claimed in claim 1, wherein the other one of the rotor pressure rings is of identical construction (Col 4 ll 24-26) and arranged at an opposite end of the laminated core arrangement (Fig 3,21a) such that the first and second pluralities of axial bores conduct coolant in opposite directions with respect to one another.

Hasebe et al discloses the claimed invention except for mentioning that the coolant flows in opposite directions with respect to the axial bores of the core. It would have been obvious to a person having ordinary skills in the art at the time the invention was made to modify the device of Hasebe et al to mention the direction of the coolant flow.

The motivation to do so is that it is well known in the art to alter the direction of coolant flow to suit the thermal requirement of the device.

9. As per dependent claim 6:

Hasebe et al discloses the claimed invention except for mentioning that the pressure rings can also be used as a fan. A claimed apparatus' intended use does not differentiate it from a prior art apparatus. Patentable weight is not given on the pressure ring being configured as a fan.

10. As per dependent claim 7:

The rotor device as claimed in claim 6, wherein the at least one rotor pressure ring is constructed in one piece (Fig 4,30).

Claims 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al in view of Poag et al (US 6300693)

11. As per (New) dependent claim 21:

The rotor device as claimed in claim 4, wherein the other one of the rotor pressure rings is positioned at opposite ends of the laminated core arrangement at an angular offset of 36° in relation to the one rotor pressure ring

Hasebe et al teaches the device as claimed above. Hasebe et al do not teach the the pressure rings to be offset in relation to each other. Poag et al teaches end caps in an angular offset. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Hasebe et al with the teachings of

Art Unit: 2834

Poag et al to arrange the rotor pressure rings in an angular offset, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70. The motivation to do so would be that it would provide for a machine with efficient cooling (Col 1 l 39 of Poag et al).

12. As per (New) independent claim 23:

A rotor device, comprising (abstract):

a laminated core arrangement having a plurality of axial bores for conduction of a coolant (abstract of Hasebe et al), and

two rotor pressure rings mounted offset to one another at opposite ends of the laminated core arrangement for axial securement of the laminated core arrangement (abstract and Fig 3 of Hasebe et al),

wherein one of the two rotor pressure rings is configured for routing the coolant through a first plurality of the axial bores (Col 3 ll 46-53, Fig 3 of Hasebe et al), and

the other one of the rotor pressure rings is configured for routing the coolant through a second plurality of the axial bores (Col 3 ll 46-53, Fig 3 of Hasebe et al), each said rotor pressure ring having a coolant lead through in fluid communication with one of the first and second pluralities of axial bores (Col 3 ll 46-53, Fig 4,25 and 30 of Hasebe et al),

a bore assembly in fluid communication with the other one of the first and second pluralities of axial bores (Fig 4,25 of Hasebe et al), and

a coolant routing wall which projects obliquely outward and is able to conceal the bore assembly in an axial direction (Col 3 ll 46-53 and Fig 3,21a, 24a and Fig 4,24, also

it would be inherent for a person skilled in the art to use an oblique ring or seal capable of concealing one or more bores or holes of the bore assembly).

Hasebe et al teaches the device as claimed above. Hasebe et al do not teach the pressure rings to be disposed in a circumferentially offset relationship. Poag et al teaches end caps which are circumferentially offset (Col 5 ll 8-25). It would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the two pressure rings to be disposed in a circumferentially offset relationship by a bore or a group of bores. The motivation to do so would be that it would be economical to manufacture, easy to assemble and provide efficient cooling (Col 1 ll 37-40 of Poag et al)

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al as per claim 1 above in view of Page (US 5825110).

13. As per dependent claim 8:

Hasebe et al discloses the claimed invention except for disclosing the use of spheroidal graphite iron as a material for the pressure rings or end rings. Page discusses the use of graphite iron (Col 3 line 25-26). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use pressure rings made of graphite iron. The motivation to do so would be that it would provide improved strength of the pressure ring, increase the lifespan and reduce the maintenance frequency of the part.



Claims 9,16,17,20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasebe et al as per claim 1 above in view of Lurie et al (US 4369386).

14. As per dependent claim 9:

The rotor device as claimed in claim 1, wherein the two rotor pressure rings are of similar configuration and extend on a common axis in such a manner that the rotor pressure rings are disposed in circumferentially offset relationship by a bore.

15. As per dependent claim 20:

The rotor device as claimed in claim 2, wherein the two rotor pressure rings are of similar configuration and extend on a common axis in such a manner that the rotor pressure rings are disposed in circumferentially offset relationship by the group of bores.

As per claims 9 and 20 above, Hasebe et al teaches the device as claimed above.

Hasebe et al do not teach the pressure rings to be disposed in a circumferentially offset relationship. Lurie et al in Figures 5,7 and 8 teaches different configurations of the coolant bores of the pressure rings, which can be easily arranged in groups of bores.

Further, Figure 2 of Lurie et al shows the laminated rotor with axial coolant bores where the coolant is flowing in opposite directions. It would have been obvious to one having ordinary skill in the art at the time the invention was made to arrange the two pressure rings to be disposed in a circumferentially offset relationship by a bore or a group of bores. The motivation to do so would be that it would minimize leakages from one chamber into another (Col 3 lines 18-20 of Lurie et al).

16. As per dependent claims 16 and 17:

The rotor device as claimed in claim 2, wherein each of the group has three or four axial bores (Figures 5,7 and 8 of Lurie et al shows a section of a pressure ring with the bores can be divided into groups having two, three or four bores each).

17. As per (New) dependent claim 22:

The rotor device as claimed in claim 1, wherein the coolant is air.

Lurie et al clearly teaches the use of air as a cooling medium (Col 1 ll 38-55).

### ***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 for details.

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2834

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Response to Arguments***

20. Applicant's arguments with respect to claims 1-9,15-17 and 20 have been considered but are moot in view of the new ground(s) of rejection.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAISHADH N. DESAI whose telephone number is (571)270-3038. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Naishadh N Desai  
Patent Examiner

/Darren Schuberg/  
Supervisory Patent Examiner, Art Unit 2834